

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 July 2005 (21.07.2005)

PCT

(10) International Publication Number
WO 2005/065241 A3

(51) International Patent Classification⁷ : **G01N 33/00**

Jerome, J., Jr. [US/US]; 299 Cypress Street, Brookline, MA 02445 (US). **ZELENCHUK, Alex, R.** [US/US]; 15 Orangewood Drive, Stoughton, MA 02072 (US).

(21) International Application Number:
PCT/US2004/043087

(74) Agent: **ELRIFI, Ivor, R.**; Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111 (US).

(22) International Filing Date:
23 December 2004 (23.12.2004)

(25) Filing Language: English

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
60/532,667 24 December 2003 (24.12.2003) US
60/571,170 14 May 2004 (14.05.2004) US

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US 60/532,667 (CIP)
Filed on 24 December 2003 (24.12.2003)
US 60/571,170 (CIP)
Filed on 14 May 2004 (14.05.2004)

(71) Applicant (*for all designated States except US*): **ARGOSE, INC.** [US/US]; 230 Second Avenue, Waltham, MA 02451 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BELLOTT, Emile, M.** [US/US]; Beverly, MA (US). **BU, Dongsheng** [US/US]; Bedford, MA (US). **CHILDS, James, J.** [US/US]; Franklin, MA (US). **LAMBERT, Christopher, R.** [US/US]; 78 Manning Street, Hudson, MA 01749 (US). **NIENABER, Hubert, A.** [US/US]; Worcester, MA (US). **SHI, Shirley, J.** [US/US]; Lexington, MA (US). **WANG, Zhaolin** [US/US]; Wellesley, MA (US). **WORKMAN,**

Published:

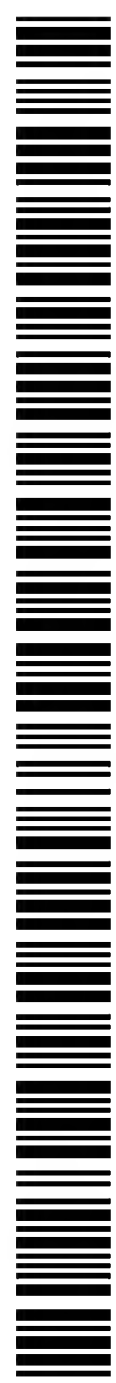
— with international search report

(88) Date of publication of the international search report:
4 May 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SMMR (SMALL MOLECULE METABOLITE REPORTERS) FOR USE AS *IN VIVO* GLUCOSE BIOSENSORS

(57) Abstract: Small Molecule Metabolite Reporters (SMMRs) for use as *in vivo* glucose biosensors, sensor compositions, and methods of use, are described. The SMMRs include boronic acid-containing xanthene, coumarin, carbostyryl and phenalene-based small molecules which are used for monitoring glucose *in vivo*, advantageously on the skin.



WO 2005/065241 A3